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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/352,355	07/13/1999	TAKASHI MORIHARA	1086.1107/JD	2142

21171 7590 11/20/2002

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EXAMINER

BUI, PHAT T

ART UNIT

PAPER NUMBER

2178

DATE MAILED: 11/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/352,355

Applicant(s)

MORIHARA ET AL.

Examiner

Phat T Bui

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07/13/1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Title

1. The title of the invention is not descriptive. A new title is required that is indicative of the invention to which the claims are directed.
2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.
3. This action is responsive to: application filed 07/13/1999.
4. Claims 1-14 are pending in the case. Claims 1, 10 and 14 are independent claims.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-4, 6, 8-10, 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whiting et al. (Whiting), US 5,016,009 filed 01/13/1989 in view of Okada, US 5,889,481 filed 07/17/1996.

Regarding independent claim 1, Whiting teaches a data compressing apparatus for generating code data from a character train stream constructed by a document including tags, comprising:

- a tag code replacing unit for arranging a tag code for identification to a position of the character train stream in which the tag was separated by said tag information separating unit. Whiting describes, "the tag of each separate portion is evaluated to determine whether the tag is the raw data tag or the tag indicating an encoded matching data string," (Whiting, col. 7, lines 33-36, and fig 5A).
- a character train coding unit for coding the character train stream including the tag code outputted from said tag code replacing unit and outputting a code stream. Whiting describes, "the method for encoding utilizes a tag bit to indicate whether an output data string is "raw" or uncompressed," (Whiting, col. 8, lines 60-62).

Whiting does not teach a tag information separating unit for separating the identified tag from said character train stream and outputting as tag information.

Okada teaches:

- a tag information separating unit for separating the identified tag from said character train stream and outputting as tag information. Okada describes, "the

code separating unit separates the compression data, code ID information, and character kind change information of each character kind,” (Okada, col. 8, lines 2-4).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made, to modify Whiting and Okada’s teachings, since tagging contains information about a file, or other structure of the file. Therefore, different components or units must be able to read and access the tagged information in order to know where these file are located.

Regarding dependent claim 2, which is dependent on claim 1, Whiting teaches an apparatus, wherein said tag code replacing unit arranges a predetermined fixed code as said tag code to the position of the character train stream in which the tag was separated. Whiting describes, “encoding the matching data string found in the history array means by appending to the variable length encoded data stream a tag indicating that the matching data string was found and by appending a string substitution code. The string substitution code includes a variable length indicator of the length of the matching data string and a pointer to the location within the history array means of the matching data string,” (Whiting, col. 6, lines 32-40).

Regarding dependent claim 3, which is dependent on claim 1, Whiting teaches an apparatus, wherein said tag code replacing unit arranges a tag code indicative of an

appearing order of the tag separated by said tag information separating unit to the position of the character train stream in which the tag was separated. Whiting describes, "the tag of each separate portion is evaluated to determine whether the tag is the raw data tag or the tag indicating an encoded matching data string," (Whiting, col. 7, lines 33-36). "If such a new string was found, the match length would be incremented and the position of the new matching string would be determined and saved," (Whiting, col. 10, lines 11-13).

Regarding dependent claim 4, which is dependent on claim 1, Whiting teaches an apparatus comprising:

- a tag information storing unit for storing the tag information separated by said tag information separating unit. Whiting describes, "during block 216 (fig. 6), the data stored at this location is output. At block 218 (fig. 6), the data is stored at HISTORY (DPTR)," (Whiting, col. 17, lines 28-30).
- a code storing unit for storing the code data formed by said character train coding unit. Whiting describes, "in the encoded form, its length and relative position within the history storing the input byte stream are appended to the output (compressed) data stream," (Whiting, col. 10, lines 18-21).
- a code switching unit for selecting the tag information stored in said tag information storing unit and the code data stored in said code storing unit and outputting the selected tag information or code data. Whiting describes, "during block 216 (fig. 6), the data stored at this location is output. At block 218 (fig. 6),

the data is stored at HISTORY (DPTR), ... a determination is made as to whether the length has been decremented to zero," (Whiting, col. 17, lines 28-34).

Regarding dependent claim 6, which is dependent on claim 1, Whiting teaches an apparatus comprising a tag information compressing unit for compressing the tag information separated by said tag information separating unit. Whiting describes, "Fig. 1a is a block diagram of a compression unit accepting uncompressed data and outputting compressed data," (Whiting, col. 7, lines 47-49). "the compression and decompression units are incorporated into a single integrated circuit," (Whiting, col. 8, lines 20-25).

Regarding dependent claim 8, which is dependent on claim 4, Whiting teaches an apparatus comprising a tag position detecting unit for detecting a position of the tag in the code data formed by said character train coding unit, wherein both the tag information separated by said tag information separating unit and designation information of the tag position detected by said tag position detecting unit are stored in said tag information storing unit. Whiting describes, "encoding by appending to said encoded data an end of compressed data marker which is detected during decompression of said variable length encoded data stream," (Whiting, col. 21, lines 30-34).

Regarding dependent claim 9, which is dependent on claim 8, Whiting teaches an apparatus wherein said tag position detecting unit detects the code amount from the head of a document or a specific tag and stores it together with the tag information into said tag information storing unit. Whiting describes, "matching data string is found within said storage means, encoding said matching data string by assigning a tag indicating that said matching data string was found, a variable length indicator of the length of said matching data string, and a pointer indicating the location within said storage means of said matching data string," (Whiting, col. 23, lines 54-60).

Regarding independent claim 10, Whiting teaches a data reconstructing apparatus for reconstructing character train data from a code stream including tag information separated from a character train stream of a document including tags and code data obtained by encoding a character train stream in which a tag code has been arranged at a position of the separated tag, comprising:

- a tag information separating unit for separating said tag information and said code data from said code stream. Whiting describes, "the variable length encoded data stream is parsed into separate portions and each separate portion starts with one of the tags. Next, the tag of each separate portion is evaluated to determine whether the tag is the raw data tag or the tag indicating an encoded matching data string," (Whiting, col. 7, lines 31-35).

- a tag information storing unit for storing the tag information separated by said tag information separating unit. Whiting describes, "the data stored at this location is output. At block 218 (fig. 6), the data is stored at HISTORY (DPTR)," (Whiting, col. 17, lines 28-30).

Whiting does not teach a character train reconstructing unit for reconstructing the character train data including the character train and the tag code from said code data and, thereafter, replacing said tag code by the tag information in said tag information storing unit.

Okada teaches:

- a character train reconstructing unit for reconstructing the character train data including the character train and the tag code from said code data and, thereafter, replacing said tag code by the tag information in said tag information storing unit. Okada describes, "a data decompressing apparatus for separating data every different character kind in various kinds of character codes and decompressing is constructed by a character string decompressing unit and a character string reconstructing unit. The character string decompressing unit separates the compression data every character kind and individually decompresses the character string of every character kind<" (Okada, col. 7, lines 60-66)

It would have been obvious to a person of ordinary skill in the art at the time the

invention was made, to modify Whiting and Okada's teachings, since a reconstructing unit would be necessary to reconstruct the data after the data was tagged and separated from the main information.

Regarding dependent claim 12, which is dependent on claim 10, Whiting and Okada teach the limitations of claim 10 as explained above. Whiting does not teach an apparatus comprising a tag information reconstructing unit for reconstructing compression data of the tag information stored in said tag information storing unit.

However, Okada teaches an apparatus comprising a tag information reconstructing unit for reconstructing compression data of the tag information stored in said tag information storing unit. Okada describes, "the character string reconstructing unit reconstructs the character string from the unified byte construction decompressed by the character string decompressing unit to a character string of different byte construction.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made, to modify Whiting and Okada's teachings, since the reconstruction unit would need to access the storing unit in order to pull out the tagged data so that it could be decompressed.

Regarding dependent claim 13, which is dependent on claim 10, Whiting teaches an apparatus according to claim 10, further comprising:

- a tag dictionary storing unit for storing a dictionary in which a reconstruction character train corresponding to a code of a tag character train serving as a processing unit when reconstructing has been registered; and a tag character train comparing unit for separating a code of the tag character train serving as a reconstruction unit from the tag information separated by said tag information separating unit and reconstructing the original tag character train with reference to said dictionary storing unit. Whiting describes, "storing said history array pointer into said hash table entry pointed to by said hashing function, operative when said matching data string is found within said history array means, encoding said matching data string found in said history array means by assigning a tag indicating that said matching data string was found and a string substitution code including a variable length indicator of the length of said matching data string and a pointer indicating the location within said history array means of said matching data string," (Whiting, col. 20, lines 40-50).

Regarding independent claim 14, Whiting teaches a data compressing method of generating code data from a character train stream constructed by a document including tags, comprising:

- a tag information separating step of separating the identified tag from said character train stream and outputting as tag information. Whiting describes, "parsing said variable length encoded data stream into separate portions, each

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said separate portion starting with one of said tags," (Whiting, col. 21, lines 40-43).

- a tag code replacing step of arranging a tag code for identification to a position of the character train stream in which the tag was separated in said tag information separating step. Whiting describes, "evaluating said tag of each said separate portion for determining whether said tag is said raw data tag or said tag indicating said encoded matching data string," (Whiting, col. 21, lines 44-47).

Whiting does not teaches a character train coding step of coding the character train stream including the tag code outputted from said tag code replacing step and outputting a code stream.

Okada teaches:

- a character train coding step of coding the character train stream including the tag code outputted from said tag code replacing step and outputting a code stream. Okada describes, "the code separating unit separates the compression data, code ID information, and character kind change information of each character kind. The character kind decompressing unit decompresses the character string every character kind from the compression data of each character kind separated by the code separating unit," (Okada, col. 8, lines 2-7).

It would have been obvious to a person of ordinary skill in the art at the time the

invention was made, to modify Whiting and Okada's teachings, since different units are needed in order to code the text, tag the information, compress and decompress the data.

7. Claims 5, 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whiting et al. (Whiting), US 5,016,009 filed 01/13/1989 in view of Aoyama, US 5,590,258 filed 10/03/1994.

Regarding dependent claim 5, which is dependent on claim 1, Whiting and Okada teach the limitations of claim 1 as explained above. Whiting and Okada do not teach a dictionary storing unit for storing a dictionary in which a character train serving as a processing unit when compressing has been registered, and a character train comparing unit for comparing a partial character train in the character train stream from said tag code replacing unit with the registration character train in said dictionary storing unit, thereby detecting a partial character train which coincides with said registration character train, allocating a predetermined code every said detected partial character train, and outputting a resultant character train.

However, Aoyama teaches an apparatus wherein said character train coding unit comprises:

- a dictionary storing unit for storing a dictionary in which a character train serving as a processing unit when compressing has been registered. Aoyama describes, "a translated word dictionary storage unit for storing at least one potential translation corresponding to a character row to be translated; a retrieval unit for

referring to the translated word dictionary storage unit and retrieving at least one potential translation corresponding to the character row to be translated inputted into the second input operation unit," (Aoyama, col. 3, lines 57-63, fig. 2, element 24 and 25).

- a character train comparing unit for comparing a partial character train in the character train stream from said tag code replacing unit with the registration character train in said dictionary storing unit, thereby detecting a partial character train which coincides with said registration character train, allocating a predetermined code every said detected partial character train, and outputting a resultant character train. Aoyama describes, "determination unit may include an insertion mode determination unit for determining insertion mode when the marked character in the text storage unit is a blank character, a replacement mode determination unit for determining replacement mode when the marked character in the text storage unit is a character, and a conversion mode notification unit for notifying the text content conversion means one of insertion mode determined by the insertion mode determination unit and replacement mode determined by the replacement mode determination unit," (Aoyama, col. 2, lines 48-53).

It would have been obvious to a person of ordinary skill in the art at the time the

invention was made, to modify Whiting, Okada and Aoyama's teachings, since tagged information would have to be stored at a specified location so that different units, such as, conversion units, comparison unit, and reconstruction unit can access the specified storage location in order to process the data.

Regarding dependent claim 7, which is dependent on claim 1, Whiting and Okada teach the limitations of claim 1 as explained above. Whiting and Okada do not teach an apparatus comprising a tag dictionary storing unit for storing a dictionary in which a tag character train in the tag information serving as a processing unit when compressing has been registered. Whiting teaches an apparatus comprising a tag character train comparing unit for comparing the partial character train of the character train stream included in the tag information separated by said tag information separating unit with the registration character train in said tag dictionary storing unit, thereby detecting a partial character train which coincides with said registration character train, allocating a predetermined code every said detected partial character train, and outputting a resultant character train. Whiting describes, "the variable length encoded data stream is parsed into separate portions and each separate portion starts with one of the tags. Next, the tag of each separate portion is evaluated to determine whether the tag is the raw data tag or the tag indicating an encoded matching data string, the next step includes interpreting the length indicator and the pointer of the substitution code for generating the matching data string. In this way, a portion of the original input data stream is reconstructed. Alternatively, when the tag is a raw data tag, then the first

character of the encoded input data stream is obtained and in this way a portion of the original input data stream is reconstructed," (Whiting, col. 7, lines 31-44).

However, Aoyama teaches an apparatus comprising a tag dictionary storing unit for storing a dictionary in which a tag character train in the tag information serving as a processing unit when compressing has been registered. Aoyama describes, "word dictionary storage unit for storing at least one potential translation corresponding to a character row to be translated; a retrieval unit for referring to the translated word dictionary storage unit and retrieving at least one potential translation corresponding to the character row to be translated inputted into the second input operation unit," (Aoyama, col. 3, lines 57-63).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made, to modify Whiting, Okada and Aoyama's teachings, since tagged information has to be compared so that the unit would know what data has to be compressed, decompressed, and stored.

Regarding dependent claim 11, which is dependent on claim 10, Whiting and Okada teach the limitations of claim 10 as explained above. Whiting does not teach an apparatus wherein said character train reconstructing unit comprises a dictionary storing unit for storing a dictionary in which a reconstruction character train corresponding to a

code of the character train serving as a processing unit when reconstructing has been registered.

Whiting teaches an apparatus wherein said character train reconstructing unit comprises:

- a character train comparing unit for separating a code of the character train serving as a reconstruction unit from said code stream and reconstructing the original character train with reference to said dictionary storing unit. Whiting describes, "the decompression unit receives a compressed data stream from the device (which in this case is a data source), reconstructs the original uncompressed data stream, and outputs it to the host," (Whiting, col. 8, lines 29-33).

- a character train replacing unit for replacing the tag code reconstructed by said character train comparing unit by the tag information in said tag information storing unit. Whiting describes, "the compression operation routine performed by the compression unit (fig. 1a) for encoding the input data stream," (col. 7, lines 61-64). Whiting also describes, "the tag of each separate portion is evaluated to determine whether the tag is the raw data tag or the tag indicating an encoded matching data string," (Whiting, col. 7, lines 33-36). "If such a new string was found, the match length would be incremented and the position of the new matching string would be determined and saved," (Whiting, col. 10, lines 11-13).

However, Aoyama teaches an apparatus wherein said character train reconstructing unit comprises a dictionary storing unit for storing a dictionary in which a reconstruction character train corresponding to a code of the character train serving as

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a processing unit when reconstructing has been registered. Aoyama describes, "a translated word dictionary storage unit for storing at least one potential translation corresponding to a character row to be translated; a retrieval unit for referring to the translated word dictionary storage unit and retrieving at least one potential translation corresponding to the character row to be translated inputted into the second input operation unit," (Aoyama, col. 3, lines 57-63, fig. 2, element 24 and 25).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made, to modify Whiting, Okada and Aoyama's teachings, since the reconstruction unit would need to access the storing unit in order to pull out the tagged data so that it could be decompressed, compared and evaluated.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

1. Miller et al., US 5,627,995 filed 06,01,1994
2. Whiting et al., US 5,414,425 filed 05,09,1994


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phat T Bui whose telephone number is 703-305-5931.

The examiner can normally be reached on Monday - Thursday, (8 - 5pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather Herndon can be reached on 703-308-5186. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

PTB
November 6, 2002


HEATHER R. HERNDON
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